

Application No. 10/609,383 Page 2

Amendments to the claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) The method of simulating connectron behavior of any genome for the purpose of modifying genomic behavior comprising the computer mediated selective deletion and/or addition of connectrons and outputting the result of said selective deletion and/or addition of connectrons to a user.

2. (Currently Amended) The method of simulating connectron behavior of a genome for the purpose of modifying, by computer, genomic behavior comprising the selective deletion and/or addition of connectrons, and providing the result of said selective deletion and/or addition of connectrons to a user.

3. (Withdrawn) A genome having a connectron comprised of the DNA elements C1, C2, T1 and T2, wherein at least one of said DNA elements has been deleted according to the following table

Type	C1	C2	T1	T2
1	D			
2		D		
3			D	
4				D

Application No. 10/609,383 Page 3

5	D	D		
6	D		D	
7	D			D
8	D	D	D	
9	D	D		D
10	D	D	D	D

where D is a connectron element to be deleted or modified.

4. (Withdrawn) A genome having a connectron comprised of the DNA elements C1, C2, T1 and T2, wherein at least one of said DNA elements has been replaced with a synthetic DNA element.

5. (Withdrawn) A genome having a connectron comprised of the native DNA elements C1, C2, T1 and T2, wherein at least one of said DNA elements has been replaced with a synthetic DNA element according to the following table

Type	C1	C2	T1	T2
1	S	S	S	S
2	S	S	S	N
3	S	S	N	S
4	S	S	N	N
5	S	N	S	S
6	S	N	S	N

Application No. 10/609,383 Page 4

7	S	N	N	S
8	S	N	N	N
9	N	S	S	S
10	N	S	S	N
11	N	S	N	S
12	N	S	N	N
13	N	N	S	S
14	N	N	S	N
15	N	N	N	S

where N is native DNA sequence and S is a synthetic DNA sequence.

6. (Withdrawn) A genome having a connectron comprised of the native DNA elements T1 and T2, wherein none, one or both of said DNA elements have been replaced with a synthetic DNA element according to the following table and where the C1 and C2 sequences are generated by the binding of a synthetic DBP according to the following table

Type	C1	C2	T1	T2
1	D	D	S	S
2	D	D	S	N
3	D	D	N	S
4	D	D	N	N

Application No. 10/609,383 Page 5

where N is native DNA sequence, S is a synthetic DNA sequence and D is a synthetic DBP.

7. (Withdrawn) A genome having a connectron comprised of the native DNA elements T1 and T2, wherein none, one or both of said DNA elements have been replaced with a synthetic DNA element according to the following table and where the C1 and C2 sequences are generated by the binding of a synthetic PNA according to the following table

Type	C1	C2	T1	T2
1	P	P	S	S
2	P	P	S	N
3	P	P	N	S
4	P	P	N	N

where N is native DNA sequence, S is a synthetic DNA sequence and P is a synthetic PNA.

Application No. 10/609,383 Page 6

8. (Withdrawn) A genome having a connectron comprised of the native DNA elements T1 and T2, wherein none, one or both of said DNA elements has been replaced with a synthetic DNA element according to the following table and where the C1 and C2 sequences are generated by the binding a linked pair of DNA binding elements G1 and G2 according to the following table

Type	C1	C2	T1	T2
1	G1	G2	S	S
2	G1	G2	S	N
3	G1	G2	N	S
4	G1	G2	N	N

where N is native DNA sequence, S is a synthetic DNA sequence and where G1 and G2 are a linked pair of double-strand DNA binding elements.

9. (Withdrawn) A genome having a connectron comprised of the native DNA elements C1, C2, T1 and T2, wherein one of said DNA elements has been replaced with a synthetic DNA element according to the following table

Type	Element-1-Style
1	C
2	E

Application No. 10/609,383 Page 7

where C is a copied sequence element, E is an extracted sequence element.

10. (Withdrawn) A genome having a connectron comprised of the native DNA elements C1, C2, T1 and T2, wherein two of said DNA elements have been replaced with a synthetic DNA element according to the following table

Type	Element-1		Element-2	
	Type	Style	Type	Style
1	C1	C	C2	C
2	C1	C	C2	E
3	C1	E	C2	E
4	C1	C	T1	C
5	C1	C	T1	E
6	C1	U	T1	U
7	C1	E	T2	E
8	C2	C	T2	C
9	C2	C	T2	E
10	C2	U	T2	U
11	C2	E	T2	E
12	T1	C	T2	C
13	T1	C	T2	E
14	T1	E	T2	E

Application No. 10/609,383 Page 8

where C is a copied sequence element, U is a unique sequence element and E is an extracted sequence element.

11. (Withdrawn) A genome having a connectron comprised of the native DNA elements C1, C2, T1 and T2, wherein three of said DNA elements have been replaced with a synthetic DNA element according to the following table

	Element-1		Element-2		Element-3	
Type	Type	Style	Type	Style	Type	Style
1	C1	C	C2	C	T1	C
2	C1	C	C2	C	T1	E
3	C1	C	C2	E	T1	C
4	C1	C	C2	E	T1	E
5	C1	U	C2	C	T1	U
6	C1	U	C2	U	T1	E
7	C1	U	C2	E	T1	U
8	C1	E	C2	C	T1	C
9	C1	E	C2	C	T1	E
10	C1	E	C2	E	T1	C
11	C1	E	C2	E	T1	E
12	C1	C	C2	C	T2	C
13	C1	C	C2	C	T2	E
14	C1	C	C2	U	T2	U
15	C1	C	C2	E	T2	C

Application No. 10/609,383 Page 9

16	C1	C	C2	E	T2	E
17	C1	E	C2	C	T2	C
18	C1	E	C2	C	T2	E
19	C1	E	C2	U	T2	U
20	C1	E	C2	E	T2	C
21	C1	E	C2	E	T2	E
22	C1	C	T1	C	T2	C
23	C1	C	T1	C	T2	E
24	C1	C	T1	E	T2	C
25	C1	C	T1	E	T2	E
26	C1	U	T1	U	T2	C
27	C1	U	T1	U	T2	E
28	C1	E	T1	C	T2	C
29	C1	E	T1	C	T2	E
30	C1	E	T1	E	T2	C
31	C1	E	T1	E	T2	E
32	C2	C	T1	C	T2	C
33	C2	C	T1	C	T2	E
34	C2	C	T1	E	T2	C
35	C2	C	T1	E	T2	E
36	C2	U	T1	C	T2	U
37	C2	U	T1	E	T2	U
38	C2	E	T1	C	T2	C
39	C2	E	T1	C	T2	E
40	C2	E	T1	E	T2	C

Application No. 10/609,383 Page 10

41 C2 E T1 E T2 E

where C is a copied sequence element, U is a unique sequence element and E is an extracted sequence element.

12. (Withdrawn) A genome having a connectron comprised of the native DNA elements C1, C2, T1 and T2, wherein four of said DNA elements have been replaced with a synthetic DNA element according to the following table

	C1	C2	T1	T2
Type	Style	Style	Style	Style
1	C	C	C	C
2	C	C	C	E
3	C	C	E	C
4	C	C	E	E
5	C	U	C	U
6	C	U	E	U
7	C	E	C	C
8	C	E	C	E
9	C	E	E	C
10	C	E	E	E
11	U	C	U	C
12	U	C	U	E
13	U	U	U	U

Application No. 10/609,383 Page 11

14	U	E	U	C
15	U	E	U	E
16	E	C	C	C
17	E	C	C	E
18	E	C	E	C
19	E	C	E	E
20	E	U	C	U
21	E	U	E	U
22	E	E	C	C
23	E	E	C	E
24	E	E	E	C
25	E	E	E	E

where C is a copied sequence element, U is a unique sequence element and E is an extracted sequence element.